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Mycelephas levisporus sp. nov. on submerged wood from a freshwater habitat in Brazil

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Abstract—A new species from submerged wood in Brazil, *Mycelephas levisporus,* is described and illustrated. The long conidiophores and smooth wide conidia with slightly constricted septa are the main characteristics that distinguish the new species from the type species.

Key words—hyphomycetes, aeroaquatic fungi, helicoidal, neotropic

Introduction

During a study of microfungi occurring on submerged plant debris in the semi-arid Northeast region of Brazil, an interesting species of *Mycelephas* R.F. Castañeda was collected on submerged wood.

Mycelephas (Gams et al. 2009) is a monotypic genus described from dead wood in Cuba (Castañeda-Ruiz 1984; as *Arnoldiella* nom illeg.); it differs from other helicoidal microfungi by bifurcate, almost cochleate conidia coiled in two different planes (Castañeda-Ruiz 1984; Goos 1987; Seifert et al. 2011). Despite these unique morphological characters, other species such as *Helicoma resinae* (Lindau) J.L. Crane & Schokn, which has mono- or polyblastic conidiogenous cells, could be confused with *Mycelephas* based on its conidia coiled 3–4.5 times in one plane. *Diplorhynchus* G. Arnaud (Arnaud 1952) and *Dichotomophthoropsis* M.B. Ellis (Ellis 1971) also share some similarities with *Mycelephas*. *Diplorhynchus* has hyaline conidia coiled in one plane and bifurcated at the end, and due to these characters Goos (1987) considered that genus as congeneric with *Mycelephas*; as no other records for *Diplorhynchus* have been registered since Arnaud (1952), however, its taxonomic status remains uncertain. *Dichotomophthoropsis* can be distinguished by its tretic conidiogenous cells, lobed cells, and helicoid conidia that do not bifurcate (Ellis 1971).

Materials & methods

Samples of submerged, decayed wood were collected in streams of Cochó River in Piatã and placed in plastic bags. In the laboratory, wood pieces were washed and placed in moist chambers. Subsequently, the moist chambers were placed in a large polystyrene box with sterile water plus glycerol at 24°C for 30 days and were examined periodically or once a week (Castañeda-Ruiz 2005). Permanent slides were prepared in PVL and micrographs were obtained with an Olympus microscope BX 51 with bright field and Nomarski interference optics. The type specimen of the new species is deposited in the Herbarium of Universidade Estadual de Feira de Santana, Bahia, Brazil (HUEFS).

Taxonomy

Mycelephas levisporus Cantillo, J. Mena & Gusmão **sp. nov.** FIG. 1

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Differs from *Mycelephas robustus* by its longer conidiophores and smooth and wider conidia.

TYPE: Brazil. Bahia: Piatã, Chapada Diamantina, Cochó River, 13°00'S 41°51'W, on submerged wood. 3.IV.2014, coll. T. Cantillo (**Holotype,** HUEFS 216594; **isotype,** HUEFS 216641).

ETYMOLOGY: Latin, *levis* + *sporus*,-referring to the smooth conidia surface.

ANAMORPHIC FUNGI, HYPHOMYCETES. COLONIES on natural substrate pulvinate, granulate, yellow to yellowish brown, aggregated. MYCELIUM mostly immersed in the substrate, septate, branched, brown. CONIDIOPHORES solitary, simple or branched, straight to flexuous, septate, smooth, light brown, turning brown with age, 93–205 × 7.5–15 µm; 7.5–12.5 µm at the apex. CONIDIOGENOUS CELLS mono or polyblastic, integrated, terminal or intercalary, sympodial, cylindrical, with dark scars. CONIDIAL SECESSION schizolytic. CONIDIA solitary, dry, light brown to subhyaline, smooth, helicoidal, 6–8 septa in the main filament, slightly constricted at septa. The filament bifurcates in two branches coiled 2–3 times giving an almost cochleate appearance, 9–15 µm diam. Mature conidia 23–(38)42.5 µm in side view, 25–37.5 µm in frontal view. The basal cells of conidia are V-shaped with truncate base; sometimes darker than other cells, 8–15 µm long, 2–3 µm at the base, and 6–10 µm at the apex.

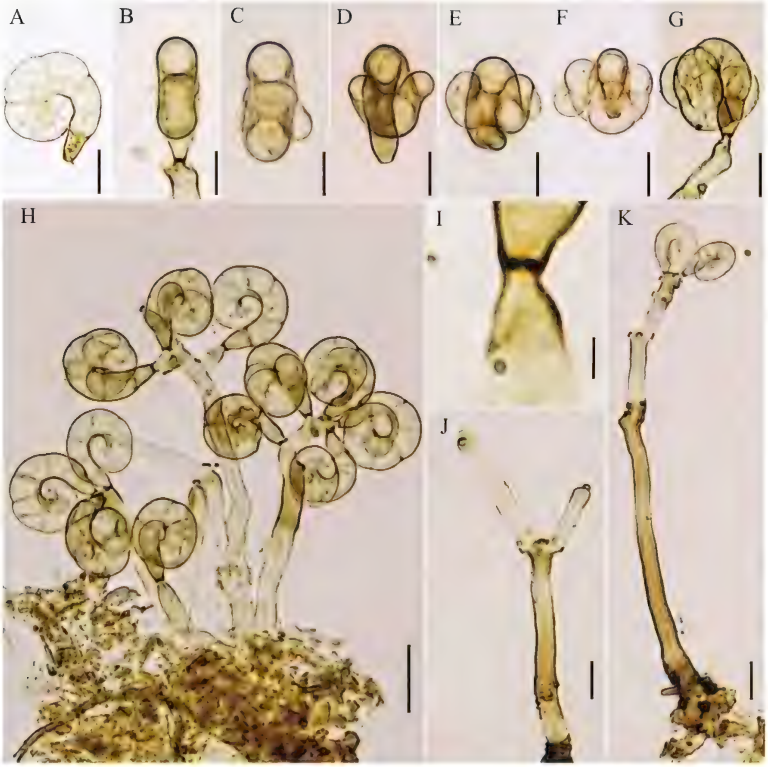

FIG. 1. *Mycelephas levisporus* (HUEFS 216594, holotype). A: immature conidium in side view; B–F: conidia in frontal view showing bifurcation of filament in two branches in different coiling stages; G: fully developed conidium; H: conidiophores and conidia; I: detail of conidiogenous cell; J, K: conidiophores showing integrated conidiogenous cells with dark scars. Scale bars: A–H, J = 10 µm; I = 2 µm; K = 20 µm.

OTHER MATERIAL EXAMINED: *Mycelephas robustus* (R.F. Castañeda) R.F. Castañeda. Cuba. La Habana: Santiago de Las Vegas, on dead branches of *Pseudolmedia spuria* (Sw.) Griseb., 1.III.1983, coll. R.F. Castañeda (**Holotype**, C83/39 INIFAT).

NOTES: *Mycelephas robustus* (R.F. Castañeda) R.F. Castañeda differs from *M. levisporus* by its smaller conidiophores (41–80 µm long) and its smaller rugose conidia (20–27 µm diam.; Castañeda-Ruiz 1984, as *Arnoldiella robusta*).

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